

# Appendix F

## Asian Tapeworm (*Bothriocephalus acheilognathi*) Host List

### Hosts<sup>1,1a,2,3,4</sup>

Potential hosts are any fish that eat the intermediate copepod hosts (*Cyclops* and *Diaptomus*). Primary hosts are cyprinoids (carps, minnows, suckers, etc.). It also infects some centrarchids (sunfish family), percids (perch, walleye, sauger, pike), poecilids (live bearers), siluroids (catfishes). The Asian tapeworm is non-host specific. It only requires two hosts, instead of the usual three hosts for cestodes.<sup>4</sup> It has not yet been reported in salmonids.

North American hosts include (1) cyprinoids such as the grass carp (*Ctenopharygodon idella*), common carp and koi (*Cyprinus carpio*), roundtail chub (*Gila robusta*), bonytail chub, virgin spinedace (*Lepidomeda mollispinis*), peamouth (*Mylocheilus*), golden shiner (*Notemigonus crysoleucas*), emerald shiner (*Notropis atherinoides*), red shiner (*Notemigonus lutrensis*), spotfin shiner (*Notropis spilopterus*), fathead minnow (*Pimephales promelas*), woundfin minnow (*Plagopterus argentissimus*), Colorado squawfish (*Ptychocheilus lucius*), speckled dace (*Rhinichthys osculus*); (2) green sunfish (*Lepomis cyanellus*), a centrarchid; and (3) the poecilid mosquito fish (*Gambusia affinis*).<sup>1a</sup>

Utah hosts include species infected in the Virgin River such as roundtail chub, woundfin minnow, speckled dace, red shiner, and virgin spinedace. In Utah Valley, infected fish are grass carp and fathead minnow. The source of the worm in the Virgin River / Lake Meade area was from infected bait minnows from the Midwest used by fishermen.<sup>1,3</sup>

European hosts are perch (*Stizostedion*), catfish (*Silurus glanus*), crucian carp (*Carassius carassius*), guppies (*Lebistes*), and mosquito fish.<sup>1a</sup>

The worm has never been found in bass (anywhere). It has not been found in percids (yellow perch, walleye, sauger, and pike) in North America. In the U.S., goldfish (*Carassius auratus*) appear to be refractory to infection.<sup>1a</sup>

### References

1. Personal communication between A. K. Hauck and Dick Heckmann, Professor of Zoology, BYU, in October 1993, June 1994, April and June 1996.
- 1a. Personal communication between A. K. Hauck and Drew Mitchell, US National Biological Survey, Stuttgart, AR, in October 1993, August 1994, June 1995, and April 1996.

2. Thoesen, John C., Editor. 1994. Suggested procedures for the detection and identification of certain finfish and shellfish pathogens. 4th ed., Version 1, Fish Health Section, American Fisheries Society.
3. Heckmann, R. A., Greger, P. D. and J. E. Deacon. The Asian Fish Tapeworm Infecting Endangered Fish Species from the Virgin River, Utah, Nevada, and Arizona. FHS/AFS Newsletter, 1986. 14(1):5
4. Heckmann, R. A. Praziquantel for Treatment of Grass Carp Infected with *Bothriocephalus acheilognathi*. FHS/AFS Newsletter, 1995. 23(3):11-13.